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independent claim 20, and therefore dependent claims 2, 5-7, 9-10, and 21 are nonobvious as well.

It is the examiner's position that Maris '816 teaches a fractional section of a vertical speed indicator scale, citing paragraphs [0016] through [0023] and [0046] through [0049], a vertical speed indicator marker, citing [0050] through [0058], wherein the fractional section has nonlinear graduations marked thereon in the vicinity of the vertical speed indicator marker [0117] through [0123], but does not disclose an arcuate vertical speed indicator scale. The examiner then looks to Etherington '504 to find an arcuate scale, citing column 1, lines 10-45; column 2, lines 9-14; and column 4, lines 18-36. The examiner then looks to Steel, Jr. for disclosure of an arcuate VSI display. The examiner asserts that these three references together render Applicants' claims 1, 2, 5-7, 9-10, and 20-21 obvious. This position is without merit.

The examiner incorrectly applies Maris and incorrectly characterizes and applies Etherington to Maris for the following reasons. First, there is no disclosure in Maris of a "fractional section of a vertical speed indicator scale" in paragraphs [0016] through [0023] and [0046] through [0049] of Maris, as claimed by the examiner. These sections of Maris describe the dynamic changing of a nonlinear display scale on a vertical moving tape display and providing on the moving tape display a pointer pointing to the scale in accordance with a reading of the dynamic parameter. There is no suggestion of a vertical speed indicator in these paragraphs as asserted by the examiner.

Maris teaches a vertical moving tape display with a dynamically changing nonlinear scale and the display can have a dynamically lengthening vertical bar (see paragraphs [0099] through [0102]) representing a vertical speed indication superimposed on the tape display. This bar 146 has a variable end that shows a future value. There is no teaching in Maris, however, of providing a vertical speed indicator with nonlinear graduations, as required by the language set forth in Applicants' independent claims 1 and 20. In fact, there is no disclosure in Maris, either in text or figures that suggests a vertical speed indicator having linear or nonlinear graduations. The element in Maris that may correspond to a VSI indicator is the bar 66 (Figure 8). There are

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no graduations on this bar. Its length indicates its magnitude, nothing more. Fundamentally Maris teaches an electronic display that replicates an edge view mechanical drum display instrument, and provides the functionality of a VSI by superimposing a vertical speed indication bar on the display itself adjacent the altitude scale. Further, this reference makes no mention or suggestion of providing an arcuate display in any way. This reference also makes no mention of nonlinear graduations on the vertical speed indicator bar. The examiner correctly notes, however, that Maris does not disclose an arcuate VSI.

The examiner notes that Etherington discloses a system of improved flight displays "from a straight basic configuration to an arcuate shape." The examiner cites column 2, lines 9-14 and Figure 4 in support thereof. Column 2, lines 9-14 merely state that an airspeed indicator 12 that has a linear scale is preferred, but could be configured as in Figure 4. Figure 4 shows a circular dial airspeed display 96 that has truncated vertical left and right sides, yet still has a radially equal set of graduations around the perimeter of the display. The current airspeed is numerically indicated in a window in the middle of this display. This cluster configuration of airspeed, horizon, altimeter, and compass allow for a more compact flight display cluster configuration. However, there is no suggestion or teaching in Etherington of providing a nonlinear set of graduations in a vertical speed indicator or of providing a fractional section of an arcuate vertical speed indicator scale. Further, there is nothing in Etherington that discloses an arcuate VSI or one that has nonlinear graduations.

The examiner cites Etherington also for suggesting that avionics displays engineers are constantly looking to improve their display presentations to pilots to enhance pilot efficiency, and concludes that because of this, "it would have been obvious to modify the teach of Maris by modify a VSI display scale to an arcuate shape to enhance the pilot's efficiencies." It is respectfully submitted that this conclusion does not logically follow from these two references cited by the examiner.

The examiner next looks to Steele, Jr. to show an arcuate VSI display, citing column 5, lines 32-50. This citation is clearly misplaced and without merit. Steele, Jr. teaches a basic set

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of CIRCULAR displays for a cockpit, consisting of six displays: compass, horizon, altimeter, VSI, airspeed, and T&B, arranged in a specific two row array. Column 5, lines 32-50 describe various groupings of these six displays. Note that, throughout Steele, Jr., the VSI 30 is shown as a circular display. The term "arc" used in column 5, lines 32-50, refers to the arrangement of the lower row of 3 displays and the upper row of 3 displays as being arcuate to permit another display such as a clock to be centrally located in the cluster. There is no disclosure or suggestion of an arcuate VSI as asserted by the examiner. The examiner has failed to establish a prima facie obviousness rejection of claims 1, 2, 5-7, 9-10, and 20-21. This rejection should be withdrawn, as claims 1 and 20 are clearly allowable over the cited art. Claims 1 and 20 are independent. Claims 2-19 and 21-31 depend from either independent claim 1 or 20 and include further limitations. For the reasons set forth above these claims are also believed to be allowable.

Claims 3, 11, and 23 stand rejected as obvious over Maris in view of Etherington, Steele, Jr., and now Gordon, et al. Gordon, et al. is cited for teaching a VSI trend indicator within a vertical moving tape display. While this may be true, Gordon, et al. does not cure the deficiencies of Maris, Etherington, and Steel, Jr. and therefore this rejection should be withdrawn.

Claims 4, 12, 15, 24, and 27 stand rejected as obvious over Maris in view of Etherington, Steele, Jr., and further in view of McElreath, et al. The examiner cites column 4, lines 4-14 and column 5, lines 48-58 in support of McElreath, et al. teaching a vertical speed indicator marker showing a vertical speed trend by its motion to replicate the motion of an analog instrument. These cited text sections describe circuitry, not a display scheme. However, McElreath, et al. does, in fact, show a vertical speed indicator marker as a needle 120 that moves over a VSI scale 118 as is shown in Figure 4. However, McElreath, et al. fails to cure the deficiencies set forth above regarding Maris, Etherington, and Steel, Jr., and therefore a prima facie obviousness rejection as not been set forth. This rejection should also be withdrawn.

Claims 13 and 25 stand rejected as obvious over Maris, Etherington, Steele, Jr., McElreath, et al., and further in view of Feyereisen, et al. Claims 13 and 25 depend from

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independent claims 1 and 20 respectively, and as they are dependent from allowable independent claims, are also believed to be allowable for the same reasons as set forth above with respect to claims 1 and 20. Feyereisen, et al. is cited as disclosing TCAS resolution advisory condition triggers that increase display size. The examiner cites paragraphs [0063] through [0068] in support thereof. Feyereisen, et al. does not cure any of the deficiencies with respect to Maris, Etherington, or Steel, Jr. set forth above with reference to the rejection of independent claim 1 and independent claim 20. Therefore, the rejection of claims 13 and 25 must fail for the same reasons. This rejection should also be withdrawn.

Claims 16 and 17 stand rejected as obvious over Maris, Etherington, and Steele, Jr., and further in view of Staggs, et al. Claims 16 and 17 depend from independent claim 1 and as dependent from allowable independent claims are also believed to be allowable for the same reasons as set forth above with respect to Claim 1. Staggs, et al. is cited as disclosing a vertical speed bug having a shaped indicator in a position inside of a fractional section of vertical speed indicator scale. While this may be true, Staggs, et al. fails to provide the missing elements of claim 1 that are lacking in Maris, Etherington, and Steele, Jr. as discussed above and therefore does not render claims 16 and 17 obvious. This rejection should be withdrawn.

Claims 18 and 19 stand rejected as obvious over Maris in view of Etherington, Steele, Jr., and Staggs, et al., and further in view of Fisher and Feyereisen, et al. As set forth above in discussing the rejection of claims 13 and 25, Feyereisen, et al. fails to cure the deficiencies of Maris, Etherington, and Steel, Jr. set forth above in the discussion of the rejection of claims 1 and 20, from which claims 18 and 19 depend. Fisher is cited as disclosing "vertical speed bug that points to a location on an edge of fractional section of a vertical speed indicator scale when a selected vertical speed value is outside the range of values shown by the fractional section of the vertical speed indicator scale." While this may be true, Fisher does not provide the missing features and thus cure the deficiencies of Maris, Etherington, and Steel, Jr., set forth above with reference to claims 1 and 20 and therefore the rejection of claims 18 and 19 should be withdrawn.

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Claims 28-29 stand rejected as obvious over Maris, Etherington, Steele, Jr. and further in view of Fisher and Gralnick. Fisher is cited as disclosing a vertical speed indicator marker parked at the edge of a fractional section of vertical speed scale. Gralnick is cited as disclosing a range of +/- 6000 fpm. However, the examiner then also apparently draws in Staggs, et al. to provide vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale to indicate to the operator of an aircraft that a set-point of an indicator is outside of the predetermined range. The examiner is still respectfully requested to note that neither Fisher, Gralnick, nor Staggs, et al. provide the missing elements required by Applicants' independent claims 1 and 20. Therefore, it is respectfully submitted that claims 28 and 29 are nonobvious over this combination of references. This rejection should be withdrawn.

Claims 30 and 31 stand rejected as obvious over Maris, Etherington, Steele, Jr., Fisher, Gralnick and further in view of Gordon, et al. Claims 30 and 31 depend from independent claim 20. For the reasons set forth above independent claim 20 is believed to be allowable over Maris, Etherington, and Steele, Jr. Neither Fisher, Gralnick, nor Gordon, et al. provide the missing features set forth above with reference to claims 1 and 21. Accordingly for the reason claim 20 is allowable, claims 30 and 31 are also allowable. This rejection is without merit and should be withdrawn.

Claim 32 stands rejected as unpatentable over Maris in view of Etherington, Steele, Jr., and Feyereisen, et al. This rejection is without merit and should be withdrawn as the combination of references does not set forth a prima facie case of obviousness. The examiner incorrectly applies Maris and incorrectly characterizes and applies Etherington to Maris for the following reasons. First, there is no disclosure in Maris of a "fractional section of a vertical speed indicator scale" in paragraphs [0016] through [0023] and [0046] through [0049] of Maris, as claimed by the examiner. These sections of Maris describe the dynamic changing of a nonlinear display scale on a vertical moving tape display and providing on the moving tape display a pointer pointing to the scale in accordance with a reading of the dynamic parameter. There is no suggestion of a vertical speed indicator in these paragraphs as asserted by the examiner.

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Claims 1-7, 9-13, 15-21, 23-25, and 27-32 remain pending in the application. For the reasons set forth above these claims are believed to be allowable. It is respectfully submitted that all of the Examiner's objections have been successfully traversed and that the application is now in order for allowance. Accordingly, reconsideration of the application and allowance thereof is courteously solicited. If there are any remaining issues or concerns, the examiner is urged to contact the undersigned attorney by telephone at the number below to expeditiously resolve such concerns.

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The Director is authorized to charge any additional fee(s) or any underpayment of fee(s), or to credit any overpayments to **Deposit Account Number 50-2638**. Please ensure that Attorney Docket Number 56946.022700 is referred to when charging any payments or credits for this case.

Respectfully submitted,


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